

Amendment A
Application Serial No. 10/707,503
Inventors: Allan McLane and William D. Kramer
Attorney Docket No. 718395.58

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended): A method for distributing and regulating the flow of coolant issuing from a water pump to a radiator that provides cooling to an engine, a bypass line and a heater comprising:

receiving coolant issuing from a water pump at a valve; valve with a valve rotor, wherein the valve rotor includes a first valve portion with at least one first internal fluid passage arrangement with at least two first openings and a second valve portion with at least one second internal fluid passage arrangement with at least two second openings, the at least one first internal fluid passage arrangement and the at least one second internal fluid passage arrangement being in fluid communication with each other;

selectively directing the received coolant from the valve to the radiator; radiator through the at least one first fluid passage arrangement;

selectively directing received coolant from the valve to the bypass line; line through the at least one first internal fluid passage arrangement and the at least one second internal fluid passage arrangement; and

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selectively directing received coolant from the valve to the heater, heater through the at least one first internal fluid passage arrangement and the at least one second internal fluid passage arrangement, wherein the selective direction of coolant provides temperature regulation for the heater and the engine.

2. (Currently Amended): A method for distributing and regulating the flow of coolant issuing from a water pump to a radiator, a bypass line and a heater comprising:
- receiving coolant issuing from a water pump in an inlet port for a valve housing; and selectively directing the coolant from the inlet port through a valve rotor, wherein the valve rotor includes a first valve portion with at least one first internal fluid passage arrangement with at least two first openings and a second valve portion with at least one second internal fluid passage arrangement with at least two second openings, the at least one first internal fluid passage arrangement and the at least one second internal fluid passage arrangement being in fluid communication with each other;
- selectively directing the received coolant from the valve to the radiator through the at least one first fluid passage arrangement through a first outlet port by moving the valve rotor into at least one preselected rotational orientation with a drive mechanism;
- selectively directing received coolant from the valve to the bypass line through the at least one first internal fluid passage arrangement and the at least one second internal fluid

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passage arrangement through a second outlet port by moving the valve rotor into at least one preselected rotational orientation with a drive mechanism; and

selectively directing received coolant from the valve to the heater through the at least one first internal fluid passage arrangement and the at least one second internal fluid passage arrangement through a third outlet port by moving the valve rotor into at least one preselected rotational orientation with a drive mechanism. wherein the valve rotor can provide at least one internal fluid passage within the valve rotor, and then through at least one of a first outlet port in the valve housing configured to direct coolant to a radiator, a second outlet port in the valve housing configured to direct coolant to a bypass line and a third outlet port in the valve housing configured to direct coolant to a heater by moving the valve rotor into at least one preselected rotational orientation with a drive mechanism.

3. (Currently Amended): The method for distributing and regulating the flow of coolant according to claim 2, further includes positioning the valve rotor in a preselected rotational orientation relative to a valve housing with a biasing mechanism.

4. (Currently Amended): The method for distributing and regulating the flow of coolant according to claim 2, further includes preventing coolant from flowing into a gap located between the valve rotor and at least one of the inlet port, the first outlet port, first outlet port, the second outlet port and the third outlet port with a flexible seal.

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5. (Currently Amended): A method for distributing and regulating the flow of coolant issuing from a ~~water~~ pump to a radiator, a bypass line and a heater comprising:
receiving coolant issuing from a ~~water~~ pump in an inlet port for a valve housing;
selectively directing the coolant from the inlet port through a valve rotor, wherein the valve rotor can provide at least one internal fluid passage within the valve rotor, and then through at least one of a first outlet port in the valve housing configured to direct coolant to a radiator, a second outlet port in the valve housing configured to direct coolant to a bypass line and a third outlet port in the valve housing configured to direct coolant to a heater by moving the valve rotor into at least one preselected rotational orientation with a drive mechanism, wherein the inlet port and the first outlet port are located in a first plane and the second outlet port and the third outlet port are located in a second plane; and
degassing of coolant from the valve housing with a fourth outlet port located on a bottom portion of the valve housing.

6. (Currently Amended): A method for distributing and regulating the flow of coolant issuing from a ~~water~~ pump to a radiator, a bypass line and a heater comprising:
receiving coolant issuing from a ~~water~~ pump in an inlet port for a valve housing;
selectively directing the coolant from the inlet port through a valve rotor, wherein the valve rotor includes a first valve portion with at least one first internal fluid passage arrangement with at least two first openings and a second valve portion with at least one second internal fluid

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passage arrangement with at least two second openings, the at least one first internal fluid passage arrangement and the at least one second internal fluid passage arrangement being in fluid communication with each other;

selectively directing the received coolant from the valve to the radiator through the at least one first fluid passage arrangement by moving the valve rotor into at least one preselected rotational orientation with a drive mechanism controlled by a processor;

selectively directing received coolant from the valve to the bypass line through the at least one first internal fluid passage arrangement and the at least one second internal fluid passage arrangement by moving the valve rotor into at least one preselected rotational orientation with the drive mechanism controlled by the processor;

selectively directing received coolant from the valve to the heater through the at least one first internal fluid passage arrangement and the at least one second internal fluid passage arrangement by moving the valve rotor into at least one preselected rotational orientation with the drive mechanism controlled by the processor; and

wherein the valve rotor can provide at least one internal fluid passage within the valve rotor, and then through at least one of a first outlet port in the valve housing configured to direct coolant to a radiator, a second outlet port in the valve housing configured to direct coolant to a bypass line and a third outlet port in the valve housing configured to direct coolant to a heater by moving the valve rotor into at least one preselected rotational orientation with a drive mechanism that is controlled by processor; and

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receiving input from at least one sensor with the processor.

7. (Currently Amended): The method for distributing and regulating the flow of coolant according to claim 6, further includes positioning the valve rotor in a preselected rotational orientation relative to a valve housing with a biasing mechanism.

8. (Currently Amended): A method for distributing and regulating the flow of coolant issuing from a water pump to a radiator, a bypass line and a heater comprising:
pumping coolant into the inlet port for the valve housing with the pump;
receiving coolant from the pump in an inlet port for a valve housing;
selectively directing the coolant from the inlet port through a valve rotor, wherein the
valve rotor includes a first valve portion with at least one first internal fluid passage arrangement
with at least two first openings and a second valve portion with at least one second internal fluid
passage arrangement with at least two second openings, the at least one first internal fluid
passage arrangement and the at least one second internal fluid passage arrangement being in fluid
communication with each other;
selectively directing the received coolant from the valve to the radiator through the at
least one first fluid passage arrangement through a first outlet port by moving the valve rotor into
at least one preselected rotational orientation with a drive mechanism controlled by a processor;

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selectively directing received coolant from the valve to the bypass line through the at least one first internal fluid passage arrangement and the at least one second internal fluid passage arrangement through a second outlet port by moving the valve rotor into at least one preselected rotational orientation with the drive mechanism controlled by the processor;

selectively directing received coolant from the valve to the heater through the at least one first internal fluid passage arrangement and the at least one second internal fluid passage arrangement through a third outlet port by moving the valve rotor into at least one preselected rotational orientation with the drive mechanism controlled by the processor;

positioning the valve rotor in a preselected rotational orientation relative to the valve housing with a biasing mechanism; and

receiving input from at least one sensor with the processor;
selectively directing the coolant from the inlet port through a valve rotor wherein the valve rotor can provide at least one internal fluid passage within the valve rotor, and then through at least one of a first outlet port in the valve housing configured to direct coolant to a radiator, a second outlet port in the valve housing configured to direct coolant to a bypass line and a third outlet port in the valve housing configured to direct coolant to a heater by moving the valve rotor into at least one preselected rotational orientation with a drive mechanism that is controlled by processor;

positioning the valve rotor in a preselected rotational orientation relative to the valve housing with a biasing mechanism;

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~~-receiving input from at least one sensor with the processor; and~~

~~pumping coolant into the inlet port for the valve housing with a fluid pump.~~